No. 670,596. Patented Mar. 26, 1901.

J. PARR.

VEHICLE AXLE.

(Application filed June 9, 1900.)

(No Model.)

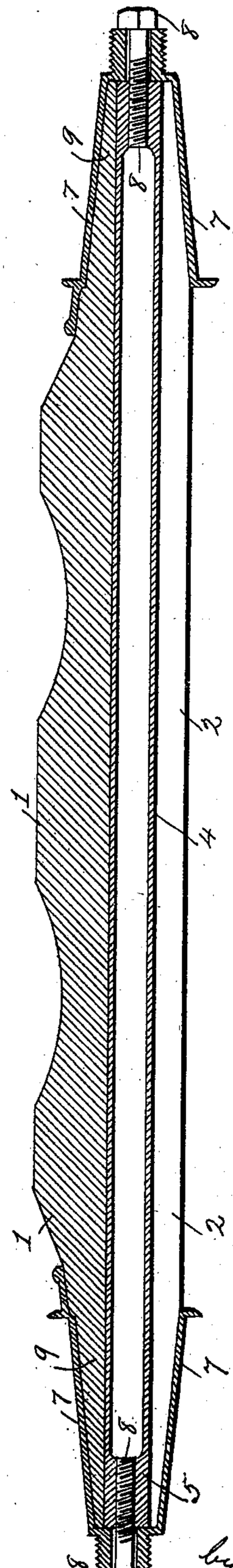

Fig. 1.

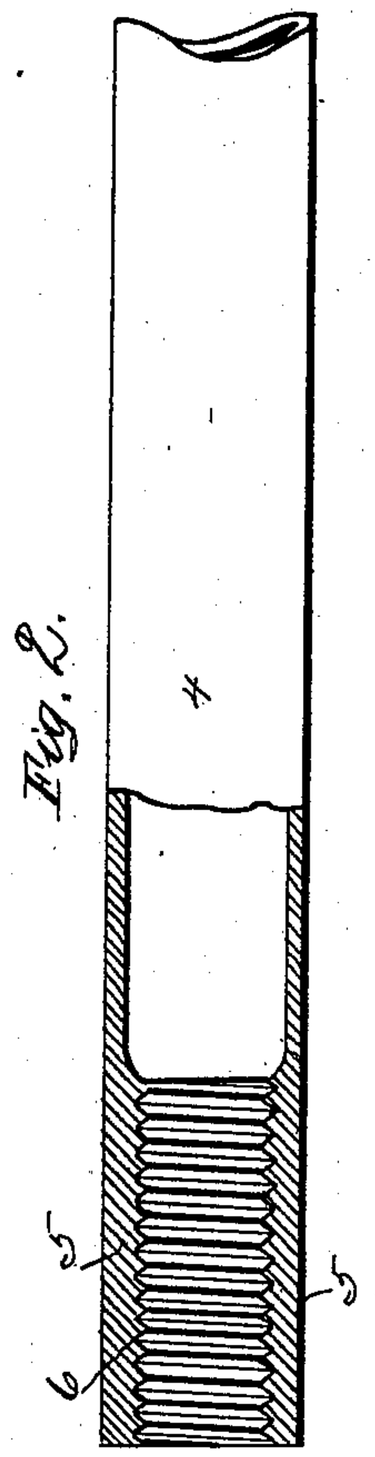

Fig. 2.

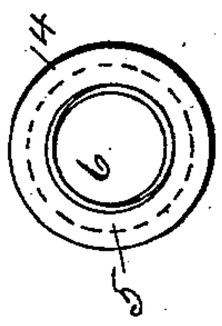

Fig. 3.

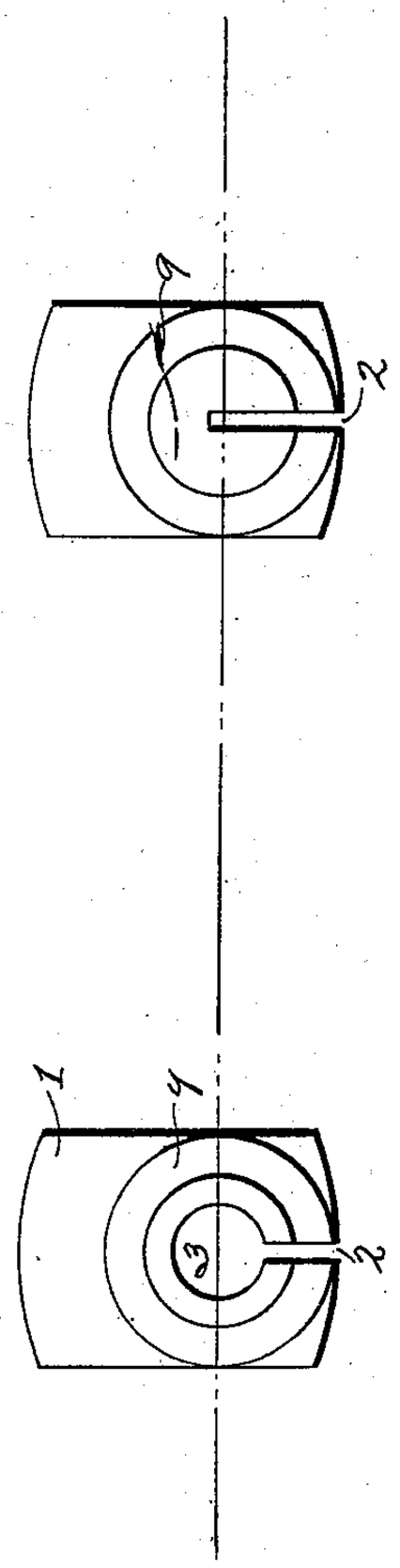

Fig. 4.

Fig. 5.

Witnesses:
J. A. Herron
Richard B. Harrison.

Inventor.
Jacob Parr.
by M. E. Harrison.
Attorney

UNITED STATES PATENT OFFICE.

JACOB PARR, OF IRWIN, PENNSYLVANIA.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 670,596, dated March 26, 1901.

Application filed June 9, 1900. Serial No. 19,785. (No model.)

To all whom it may concern:

Be it known that I, JACOB PARR, a citizen of the United States of America, residing at Irwin, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Vehicle-Axles; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved vehicle-axle; and it consists in an axle provided with a central tube or shaft upon which a strong tension is placed and a method of boring the said axle for the reception of the said tube or shaft; and my invention further consists in certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a front sectional elevation of an ordinary vehicle-axle formed from wood and provided with a central tube and fittings, the same being constructed and arranged in accordance with my invention. Fig. 2 is an enlarged detailed side elevation of a portion of the tension-tube, a part of which is shown in section. Fig. 3 is an end elevation of the same. Fig. 4 is an end elevation of the wooden axle bored ready to receive the skeins and the tension-tube. Fig. 5 is an end elevation of the wooden axle provided with the kerf or saw-cut ready to commence boring the annular opening for the tube.

To construct an axle in accordance with my invention, I take the ordinary hickory wooden axle 1 and by means of a circular saw form a kerf 2, extending from one end of the axle to the other and of a depth slightly beyond the point corresponding to the center of the tube 4 when in position. After this cut 2 has been formed the auger used in boring will follow the said cut, as the point of the same meets with but little resistance, and in consequence a straight true circular opening is formed from one end of the axle to the other. Placed in the opening thus formed is a tube 4, having upset ends 5 and formed with an internal screw-thread 6, and the said tube being of a length slightly less than the entire length of the axle 1. Arranged upon each end 9 of the axle 1 are skeins 7 of ordinary construction, and each end of the tube 4 is fitted with a bolt 8, engaging with the screw-threads 6 and bearing against the ends of the skeins 7. These bolts 8 are screwed tightly in position to place a tension upon the tube 4.

It will be seen by this construction of an axle that when the carrying strain or load is placed upon the axle 1 the burden is transferred by the spring of the wood to the tube 4, and the said tube being supported at both ends it would require to reach the breaking-point a burden sufficient to overcome the tensile strength of the said tube, together with the added carrying strength of the axle 1.

In experimenting upon the carrying strength of an axle such as above described it has been found that while an ordinary wooden axle, such as is used in connection with my invention, is guaranteed when in use to carry two thousand five hundred pounds equally distributed in the vehicle a single similar axle fitted with my improvements has been tested with a load above thirty thousand pounds without fracture or injury to the same. It is also found in practice that by the use of the best auger-bits it is impossible to bore a true opening for the reception of the tube 4, as the wood used is of a very hard nature and the bit will invariably follow the grain of the wood; but by first forming the kerf or cut 2 an opening or way is made for the point of the bit, thereby directing the same in a direct line.

It is obvious that various slight modifications may be made without departing from the spirit of the invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination with the wooden axle having a bore extending through the same from end to end, of a tube fitted in said bore and extending the length of the wooden axle, said tube having interiorly-threaded ends, and means for securing the tube in position, substantially as described.

2. In vehicle-axles, the wooden axle having a bore of equal diameter extending through the wooden axle from end to end, combined with the metallic tube fitted in said bore, said tube having upset ends provided with interior screw-threads, and threaded bolts engag-

ing in said ends for securing the tube in position, substantially as described.

3. In vehicle-axles, the wooden axle having a bore of equal diameter throughout extending from end to end of the axle, the skeins mounted on the ends of said wooden axle, a metallic tube fitted in said bore and provided with upset interiorly-threaded ends, and means engaging said threaded ends and the skeins for securing the tube in position, substantially as described.

4. In vehicle-axles, the wooden axle having a bore of equal diameter throughout and extending from end to end of the axle, the skeins mounted on the ends of said wooden axle, a metallic tube fitted in said bore and provided with upset interiorly-threaded ends, and threaded bolts engaging the said threaded ends of the tube and the skeins for securing the tube in position, substantially as described.

5. The combination with the wooden axle having a circular bore extending therethrough and a kerf along the under side which registers with the bore throughout its length, of a metallic tube fitted in the bore and provided with upset interiorly-threaded ends for securing the tube in position, substantially as described.

6. The combination with a wooden axle having a circular bore extending through the same from end to end and having a kerf along its under side which registers with the bore throughout its length, of a metallic strengthening-tube fitted within said bore, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JACOB PARR.

Witnesses:
R. W. MILLER,
RICHARD S. HARRISON.